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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/548,213	04/12/2000	Kouichi Matsuda	122.1203-Re	6182

21171 7590 12/11/2001

STAAS & HALSEY LLP  
700 11TH STREET, NW  
SUITE 500  
WASHINGTON, DC 20001

EXAMINER

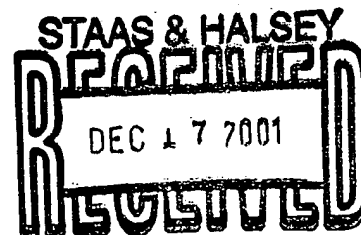
TIBBITS, PIA FLORENCE

ART UNIT PAPER NUMBER

2838

DATE MAILED: 12/11/2001

Please find below and/or attached an Office communication concerning this application or proceeding.



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# Office Action Summary

Application No.

09/548,213

Applicant(s)

Matsuda et al.

Examiner

Pia Tibbits

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1) ☒ Responsive to communication(s) filed on Oct 31, 2001

2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

## Disposition of Claims

4) ☒ Claim(s) 1-147 is/are pending in the application.

4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) ☒ Claim(s) 1-10 is/are allowed.

6) ☒ Claim(s) 11-117 is/are rejected.

7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

8) ☒ Claims 117-147 are subject to restriction and/or election requirements.

## Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☒ All b) ☐ Some\* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☒ Certified copies of the priority documents have been received in Application No. 08/578,805.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

15) ☐ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_

20) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Reissue Applications*

1. This reissue application was filed without the required offer to surrender the original patent or, if the original is lost or inaccessible, an affidavit or declaration to that effect. The original patent, or an affidavit or declaration as to loss or inaccessibility of the original patent, must be received before this reissue application can be allowed. See 37 CFR 1.178.

2. Applicant is reminded of the continuing obligation under 37 CFR 1.56 to timely apprise the Office of any litigation information, or other prior or concurrent proceeding, involving Patent No. 5739667, which is material to patentability of the claims under consideration in this reissue application. This obligation rests with each individual associated with the filing and prosecution of this application for reissue. See MPEP §§ 1404, 1442.01 and 1442.04.

3. The applicant needs to submit a Supplemental Reissue Oath/ Declaration, in accordance with MPEP 1414.01, since new claims have been added to the originally submitted case.

### *Election By Originally Presented Claims*

4. MPEP § 818.02(a) states that where claims to another invention are properly added and entered in the application before an action is given, they are treated as original claims for purposes of restriction only. **The claims originally presented and acted upon by the Office on their merits determine the invention elected by an applicant in the application, and in any request for continued examination (RCE) which has been filed for the application.**

4. Newly submitted claims

a) **118-129** are drawn to a battery cell charging with multi-rate charging control,

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b) **130-132** are drawn to a power supply apparatus including a power converter regulator, and

c) **133-147** are drawn to a charger control circuit.

are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: **the original patent [5739667]** disclosed a system for controlling the supply of power from an external power source to rechargeable batteries in an apparatus which can be powered either by the external power source or the rechargeable batteries, comprising: a first detector for detecting a difference between a maximum permissible charging current allowed by the rechargeable batteries and a charging current flowing to the rechargeable batteries; a second detector for detecting a maximum useable current by detecting a difference between a maximum suppliable current allowed by the external power source and the current being consumed by the apparatus; a third detector for detecting a difference between the maximum useable current and the charging current flowing to the rechargeable batteries; and a controller for controlling power supplied from the external power source to the rechargeable batteries in accordance with the differences detected by the first and third detectors so that the charging current flowing to the rechargeable batteries does not exceed the maximum permissible charging current and does not exceed the maximum useable current. Subsequently filed claims **11-25** are drawn to a charger control with detection of "**charging power** given to a load varying based on the state of the load", while added claims **133-147** are drawn to a "**current** given to the load varying based on the state of the load".

The subject matter of added claims **130-132**, a power supply apparatus including a power converter regulator, was never included in neither the original patent [5739667], nor in the subsequently filed claims. The subject matter of added claims **118-129** is the addition of **feedback from the charger** to control the power to both, a battery and a load.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on

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the merits. Accordingly, claims 118-147 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Therefore subsequently presented claims **118-147**, which are added by amendment following action by the examiner, and are drawn to an invention other than that acted upon, are treated as indicated by 37 CFR 1.145, which states that "if, after an office action on an application, the applicant presents claims directed to an invention distinct from and independent of the invention previously claimed, the applicant will be required to restrict the claims to the invention previously claimed if the amendment is entered, subject to reconsideration and review as provided in §§ 1.143 and 1.144."

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 11-117 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11: the statement "the power charged to the battery becomes a value assigned in advance" is confusing since "the power" is not a measurable battery parameter or characteristic.

Claim 12: the statement "the charging current becomes equal to or lower than a value assigned to the battery" is confusing since "a value" does not specifically address which battery parameter is considered.

Claim 13: the statement "the charging voltage becomes equal to or lower than a value assigned to the battery" is confusing since "a value" does not specifically address which battery parameter is considered.

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Claim 15: the statement "the charging power the charger supplies to the battery" is confusing since it is not clear which power component is addressed, i.e., current or voltage.

The above are but a few specific examples of indefinite and functional or operational language used throughout the claims, and are only intended to illustrate the extensive revision required to overcome the rejection under 35 USC 112, second paragraph. The above mentioned corrections therefore, are in no way a complete and thorough listing of every indefinite and functional or operational language used throughout the claims. Applicant is required to revise all of the claims completely, and not

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 11-117, as best as they can be understood at this time, are rejected under 35 U.S.C. 103(a) as being unpatentable over prior art cited by applicant, WO 93/19508 [hereinafter WO].

WO discloses a power charger apparatus 300 provided for supplying electrical power to an electrical device 200 for operation, or to a battery 402 for charging, or both. The charger apparatus 300 includes a primary power supply 302 for supplying power from an external power source to the power charger 300, a power converter 306 coupled to the primary power supply 302 for converting the power received by the primary power supply 302 from the external power source into a form usable by the power charger 300, and a power controller 308 coupled to the power converter 306 for controlling the power applied to the device 200 or the battery 402, or both, **so that regardless of the rate of charge of the battery 402, a constant current is maintained for charging the battery 402**, while the

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voltage across the device 200 and battery 402 is allowed to vary. A charge rate sensor 404 connected to the battery 402 and coupled to the power controller 308 measures the voltage across the battery.

WO discloses that charger 300 is capable either of charging battery pack 400 or operating computer 200, or both simultaneously. If battery pack 400 is not present in the unit, charger 300 powers computer 200. If battery pack 400 is connected to charger 300, which is capable of sensing the presence of battery pack 400, charger 300 begins charging the battery pack while powering computer 200. Upon reaching a full charge, battery pack 400 is switched out of full charge operation and is placed in a trickle charge operation from charger 300. Since **both battery pack 400 and computer 200 connect in parallel**, with no separate means of current limiting between charger 300 and battery pack 400, charger 300 must monitor current through battery pack 400 and provide adequate voltage that will support the required **charging current** for battery pack 400. Accordingly, as battery pack 400 charges, the voltage increases across both battery pack 400 and computer 200. To continue powering computer 200 when battery pack 400 is removed, charger 400 must detect the absence of battery pack 400 and operate in **a mode of constant voltage** measured at an output of charger unit 300.

WO does not specifically disclose that the charging current becomes equal to or lower than the charging current assigned in advance to the battery. However, WO discloses that **the charge rate sensor comprises a variable resistance value and a voltage detector** for measuring the voltage across the resistor while the battery is charging. The variable resistance value allows the battery to either rapid charge, trickle charge, or discharge (power the device). A charge monitor, connected to the battery and coupled to the power controller, monitors the battery during charging and signals the power controller the state of charge on the battery. Based on the monitoring by the charge monitor, the charge monitor and power controller place the battery into either a rapid charge, trickle charge, or power discharge state. The charge monitor uses either a temperature sensing system, a change of voltage sensing ( $-\Delta V$ ) system, or a charge timing system, or any combination of the three.

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9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

***Allowable Subject Matter***

10. Claims 1-10 allowed. None of the references of record prior to applicant's filing date discloses, teaches or suggests the specific combination of the first, second, and third current detectors as claimed in independent claims 1, 3, and 9.

***Response to Arguments***

11. Applicant's arguments filed on March 19, 2001 have been fully considered but they are not persuasive in view of the above art rejection.

a) With regard to claims 26-34: **claim 26** recites that the charging current becomes equal to or lower than **the charging current assigned in advance to the battery**, **claim 27** recites that the charging voltage becomes within **a voltage value assigned in advance to the battery**, **claim 28** recites that **the charging power is the prescribed maximum permissible supply power minus the detected power applied to the load**, etc. Therefore it is not clear what the applicant is trying to claim: constant voltage or constant current charging, and what happens when the load is powered.



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***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, as best as it can be understood at this time. The prior art cited in PTO-892 and not mentioned above disclose related apparatus, as best as it can be understood at this time.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Pia Tibbits whose telephone number is (703) 308-7305. If unavailable, contact the Supervisory Patent Examiner Peter Wong whose telephone number is (703) 305-3477.

15. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (703) 308-0956.

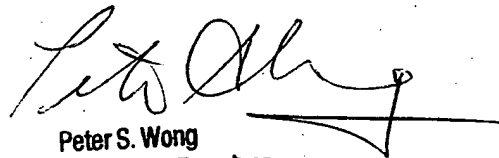
Papers related to Technology Center 2800 applications **only** may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly

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marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is (703) 308-7722 or (703) 308-7724.

PFT

December 6, 2001



Peter S. Wong  
Supervisory Patent Examiner  
Technology Center 2800